



Tree Planting Time Brings Challenges: Pine Tip Moths

Three species of pine tip moths damage young pines in the southern United States, with the Nantucket pine tip moth being the most common. Pine tip moths feed on the buds and current shoots of trees up to about 15 feet in height. The effect of the feeding is to reduce the amount of new growth of expanding shoots.

Attacks are concentrated in the upper two-thirds of the tree with an increasing gradient of attacks from the base to the top. This pattern closely follows the distribution of nitrogen content of new foliage and developing shoots. The leading terminal shoot is the site attacked most often. When it is, the tree responds in one of three ways. If only the terminal but is killed, then a lateral bud will assume dominance, or if all the buds in the cluster are damaged, adventitious buds may form below the dead tissue. The third response is when a lateral branch in the whorl immediately below the terminal assumes dominance, becoming the new leader. This type of damage usually results in a severe stem deformity (such as a crook being formed). In all these cases, the general result is an increase in the level of com-

pression wood within the main stem which ultimately can result in reduced lumber quality and pulp yield.

Trees protected from tip moth attack exhibit rapid early growth.



Figure 1: Tip Moth

In unthinned stands, the advantage resulting from control appears to decrease with time primarily due to trees protected from attack reaching crown closure earlier than untreated ones. Once the carrying capacity of the site is attained, growth decelerates unless increased growing space is provided. However, in thinned stands, the early advantage is captured during the intermediate harvests.

Tip moth infestation levels are highest where intensive early stand management is practiced. Plantations with intensive site preparation generally have higher

tip moth levels than less intensively managed sites. Generally, the highest populations can be found in mechanically site-prepared plantations that have received herbaceous weed control.

For more detailed discussion of this group of insects and timing of control measures see <http://www.forestpests.org/nptm/>. Of particular interest is the timing of any control measures taken. The Nantucket pine tip moth has several generations per year. To exert the greatest

impact on the tip moth population control of the first generation is critical. Controlling the first generation of tip moths during the first two years of stand establishment greatly influences the overall impact of the tip moth on the stand. The tables presented in the article on the web site mentioned above are helpful in planning management, control, measures to be used against tip moths.

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